

AMENDMENTS TO THE CLAIMS

Please cancel Claims 62, 73, 74 and 77 and amend the remaining Claims as follows:

60. (Currently amended) An isolated nucleic acid molecule selected from the group consisting of:

(a) an isolated nucleic acid molecule having an at least 50 contiguous nucleotide region identical in sequence to an at least 50 contiguous nucleotide region from SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70;

(b) an isolated nucleic acid molecule comprising ~~an at least 60 nucleotide region that is a nucleic acid sequence~~ at least 95% identical ~~in~~ to the sequence ~~to an at least 60 contiguous nucleotide region from~~ of SEQ ID NO:54, ~~SEQ ID NO:56~~, SEQ ID NO:57, ~~SEQ ID NO:59~~, SEQ ID NO:60, ~~SEQ ID NO:62~~, SEQ ID NO:63, ~~SEQ ID NO:64~~, SEQ ID NO:65, ~~SEQ ID NO:67~~, ~~or~~ SEQ ID NO:68 ~~or SEQ ID NO:70~~, wherein said isolated nucleic acid molecule encodes a protein that elicits an immune response to a protein having the amino acid sequence of SEQ ID NO:61 or binds a canine IL-13 protein; and

(c) an isolated nucleic acid molecule fully complementary to the isolated nucleic acid molecule of (a) or (b).

61. (Currently amended) The isolated nucleic acid molecule of claim 60, wherein said isolated nucleic acid molecule comprises a nucleic acid sequence ~~encoding an amino acid sequence~~ selected from ~~SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69~~ SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70.

62. (Canceled) ~~The isolated nucleic acid molecule of claim 60, wherein said isolated nucleic acid molecule comprises a nucleic acid sequence 95% identical to the sequence of SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62,~~

~~SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70, and wherein said isolated nucleic acid sequence encodes a protein that binds a canine IL-13 protein.~~

63. (Currently amended) An isolated nucleic acid molecule selected from the group consisting of:

(a) an isolated nucleic acid molecule encoding a protein selected from the group consisting of:

(i) a protein comprising an amino acid sequence 95% identical to the sequence of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69, wherein said protein elicits an immune response to a protein having the amino acid sequence of SEQ ID NO:61 or binds a canine IL-13 protein; and

(ii) a protein comprising an at least 40 contiguous amino acid region identical in sequence to an at least 40 contiguous amino acid region from SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69; and

(b) an isolated nucleic acid molecule fully complementary to an isolated nucleic acid molecule of (a).

64. (Currently amended) An isolated protein selected from the group consisting of:

(a) a protein comprising an at least ~~50~~ 40 contiguous amino acid sequence identical to an at least ~~50~~ 40 contiguous amino acid sequence from SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69, ~~wherein said protein binds a canine IL-13 protein~~; and

(b) a protein comprising an amino acid sequence ~~that is~~ at least 95% identical in sequence to SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69, wherein said protein elicits an immune response to a protein having the amino acid sequence of SEQ ID NO:61 or binds a canine IL-13 protein.

65. (Reiterated) The isolated protein of claim 64, wherein said isolated protein comprises an amino acid sequence selected from SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69.

66. (Currently amended) An isolated ~~chimeric~~ nucleic acid molecule encoding a fusion protein, wherein said nucleic acid molecule comprises a first nucleic acid sequence encoding a carrier protein, and wherein said nucleic acid molecule further comprises a second nucleic acid sequence encoding ~~comprising a carrier protein domain and a canine IL-13R α 2 protein domain,~~ wherein said ~~canine IL-13R α 2 protein domain~~ comprises an at least 40 contiguous amino acid region identical in sequence to an at least 40 contiguous amino acid region from SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69, ~~and wherein said canine IL-13R α 2 protein domain binds a canine IL-13 protein.~~

67. (Reiterated) The chimeric nucleic acid molecule of claim 66, wherein said fusion protein comprises a linker sequence.

68. (Currently amended) The chimeric nucleic acid molecule of claim 66, wherein said carrier protein ~~domain~~ is an immunoglobulin Fc region.

69. (Currently amended) The chimeric nucleic acid molecule of claim 66, wherein said carrier protein ~~domain~~ is a canine immunoglobulin Fc region.

70. (Currently amended) The chimeric nucleic acid molecule of claim 66, wherein said carrier protein ~~domain~~ is a canine immunoglobulin gamma Fc region.

71. (Currently amended) The chimeric nucleic acid molecule of claim 66, wherein said ~~chimeric nucleic acid molecule~~ comprises a second nucleic acid sequence is at least 95% identical to a nucleic acid sequence selected from the group consisting ~~SEQ ID NO:71, SEQ ID NO:74, SEQ ID NO:77, SEQ ID NO:80 and SEQ ID NO:82~~ SEQ ID NO:54, SEQ ID NO:57, SEQ ID NO:60, SEQ ID NO:63, SEQ ID NO:65 and SEQ ID NO:68, and wherein said second nucleic acid sequence encodes a protein that elicits an immune response to a protein having the amino acid sequence of SEQ ID NO:61 or binds a canine IL-13 protein.

72. (Currently amended) The chimeric nucleic acid molecule of claim 66, wherein said ~~IL-13R α 2 protein domain is encoded by~~ second nucleic acid sequence is selected from the group consisting of SEQ ID NO:54, SEQ ID NO:57, SEQ ID NO:60, SEQ ID NO:63, SEQ ID NO:65 and SEQ ID NO:68 SEQ ID NO:71, SEQ ID NO:74, SEQ ID NO:77, SEQ ID NO:80 and SEQ ID NO:82.

73. (Canceled) ~~The chimeric nucleic acid molecule of claim 66, wherein said carrier protein domain is encoded by the 5' end of the nucleic acid molecule and said IL-13R α 2 protein domain is encoded by the 3' end of the nucleic acid molecule.~~

74. (Canceled) ~~The chimeric nucleic acid molecule of claim 66, wherein said IL-13R α 2 protein domain is encoded by the 5' end of the nucleic acid molecule and said carrier protein domain is encoded by the 3' end of the nucleic acid molecule.~~

75. (Currently amended) A fusion protein comprising a first ~~carrier protein~~ domain and a ~~canine IL-13R α 2 protein~~ second domain, wherein said first domain comprises the amino acid sequence of a carrier protein, and wherein the second domain comprises an at least 40 contiguous amino acid region identical in sequence to an at least 40 contiguous amino acid region from SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69.

76. (Currently amended) The fusion protein of claim 75, wherein said fusion protein comprises an amino acid sequence selected from the group consisting of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66, SEQ ID NO:69, SEQ ID NO:72, SEQ ID NO:75, SEQ ID NO:78 and SEQ ID NO:81.

77. (Canceled) ~~The fusion protein of claim 75, wherein said IL-13R α 2 protein domain comprises an amino acid sequence selected from the group consisting of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61 and SEQ ID NO:66 and SEQ ID NO:69.~~

78. (Currently amended) A therapeutic composition comprising ~~a nucleic acid molecule comprising a nucleic acid molecule encoding a protein selected from a canine IL-13R α 2 protein and the fusion protein of claim 75~~ the isolated protein of Claim 64.

79. (Reiterated) A method to regulate an immune response in a canid, said method comprising administering to said canid the therapeutic composition of claim 78.

80. (Currently amended) A method to produce a canine IL-13R α 2 protein, said method comprising:

(a) culturing a cell comprising a recombinant nucleic acid molecule selected from the group consisting of:

(i) an isolated nucleic acid molecule having an at least 50 contiguous nucleotide region identical in sequence to an at least 50 contiguous nucleotide region from SEQ ID NO:54, SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:67, SEQ ID NO:68 or SEQ ID NO:70;

(ii) an isolated nucleic acid molecule comprising ~~an at least 100 nucleotide region that is a nucleic acid sequence~~ at least 95% identical ~~in sequence to an at least 100 contiguous nucleotide region from~~ SEQ ID NO:54, ~~SEQ ID NO:56, SEQ ID NO:57, SEQ ID NO:59, SEQ ID NO:60, SEQ ID NO:62, SEQ ID NO:63, SEQ ID NO:64, SEQ ID NO:65, SEQ ID NO:67, or~~ SEQ ID NO:68 ~~or SEQ ID NO:70~~, wherein said isolated nucleic acid molecule encodes a protein that elicits an immune response to a protein having the amino acid sequence of SEQ ID NO:61 or binds a canine IL-13 protein;

(iii) an isolated nucleic acid molecule encoding a protein comprising an amino acid sequence 95% identical to the SEQ of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69, wherein said protein elicits an immune response to a protein having the amino acid sequence of SEQ ID NO:61 or binds a canine IL-13 protein; and

(iv) an isolated nucleic acid molecule encoding a protein comprising an at least 40 contiguous amino acid region identical in sequence to an at least 40 contiguous amino acid region from SEQ of SEQ ID NO:55, SEQ ID NO:58, SEQ ID NO:61, SEQ ID NO:66 or SEQ ID NO:69, ~~wherein said protein binds a canine IL-13 protein; and~~

~~(v) — an isolated nucleic acid molecule fully complementary to the isolated nucleic acid molecule of (i), (ii), (iii) or (v); and~~

(b) recovering said canine IL-13R α 2 protein.